AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A method for the calculation and back-solving of complex relationships in a sub cube of a multidimensional database system comprising the steps of:

a) inputting from a user the required values of specified cells and any constraints;

b) where more than one calculation may affect a cell, selecting a calculation for the affected cell in accordance with a set of prioritisation rules;

c) creating one or more parent/child tables giving the relationships and dependencies between target cells and other cells in the sub-cube;

d) determining from the one or more parent/child tables the one or more target cells requiring one or more backsolving calculations to be performed;

e) for each target cell requiring backsolving calculations:

i) performing the one or more backsolving calculations and recording that a change has taken place;

ii) remembering the one or more parent cells of the target cell to ensure they are recalculated;

iii) recalculating the values for each remembered parent cell and recording that a change has taken place;

iv) repeating the i) performing, ii) remembering, and iii) recalculating steps until all changes to the target cells and their parent cells are complete;

v) repeating the i) performing, ii) remembering, iii) recalculating, and iv) first repeating steps until no changes are recorded; and

e) reporting the results of the foregoing steps to the user.

Claim 2 (Currently amended): The method of claim 1 wherein the Parent/Child table creating step c) is carried out as part of the performing one or more backsolving calculations step i), so that in smaller, less complex sub-cubes, there is some advantage taken in the reduced number of times a particular cell is accessed.

Claim 3 (Currently amended): A system for calculating and back-solving complex relationships in a sub cube of a multi dimensional database system comprising:

a) means for inputting from a user the required values of specified cells and any constraints;

b) means for selecting a calculation for the affected cell in accordance with a set of prioritisation rules;

c) means for creating one or more parent/child tables giving the relationships and dependencies between target cells and other cells in the sub-cube;

d) means for determining from the one or more parent/child tables the one or more target cells requiring one or more backsolving calculations to be performed and remembering said target cells;

~~for each target cell requiring backsolving calculations:~~

e) means for performing the one or more backsolving calculations for each said remembered target cell and recording that a change has taken place;

f) means for remembering the one or more parent cells of said target cell to ensure they are recalculated;

g) means for recalculating the values for each remembered parent cell and recording that a change has taken place;

~~wherein the means for performing, the means for remembering, and the means for recalculating are operable until all changes to the target cells and their parent cells are complete;~~

~~and wherein the means for performing, the means for remembering, and the means for recalculating, are operable until no changes are recorded;~~ and

h) means for reporting the results of the forgoing means to the user.

Claim 4 (Currently amended): A computer program product for calculating and back-solving complex relationships in a sub cube of a multi dimensional database system the computer program product comprising a computer-readable storage medium having computer-readable program code means embodied in it, said computer readable program code means comprising:

a) computer readable program code means for inputting from a user the required values of specified cells and any constraints;

b) computer readable program code means for selecting a calculation for the affected cell in accordance with a set of prioritisation rules;

c) computer readable program code means for creating one or more parent/child tables giving the relationships and dependencies between target cells and other cells in the sub-cube;

d) computer readable program code means for determining from the one or more parent/child tables the one or more target cells requiring one or more backsolving calculations to be performed;

~~for each target cell requiring calculations:~~

e) computer readable program code means for performing the one or more backsolving calculations for each said remembered target cell and recording that a change has taken place;

f) computer readable program code means for remembering the one or more parent cells of the target cell to ensure they are recalculated;

g) computer readable program code means for recalculating the values for each remembered parent cell and recording that a change has taken place;

~~wherein the computer readable program code means for performing, the computer readable program code means for remembering, and the computer readable program code means for recalculating are operable until all changes to the target cells and their parent cells are complete;~~

~~and wherein the computer readable program code means for performing, the computer readable program code means for remembering, and the computer readable program code means for recalculating, are further operable until no changes are recorded;~~ and

h) computer readable program code means for reporting the results of the foregoing computer readable program code means to the user.

Claim 5 (New): The method of claim 1 wherein the step b) includes the step of accepting from a user an adjustment to the prioritisation rules.

Claim 6 (New): The method of claim 1 including after step b) the step of: b1) checking the sub cube for consistency.